

## III.1 AFFECTED ENVIRONMENT

Volume III presents an overview of the affected environment of the Desert Renewable Energy Conservation Plan (DRECP) area and within the BLM Land Use Plan Amendment (LUPA) Decision Area. The 24 chapters in this volume provide context for the following issue-specific topics:

- III.2 Air Quality
- III.3 Meteorology and Climate Change
- III.4 Geology and Soils
- III.5 Flood Hazard, Hydrology, and Drainage
- III.6 Groundwater, Water Supply, and Water Quality
- III.7 Biological Resources
- III.8 Cultural Resources
- III.9 Native American Interests
- III.10 Paleontological Resources
- III.11 Land Use and Policies
- III.12 Agricultural Land and Production
- III.13 BLM Lands and Realty—Rights-of-Way and Land Tenure
- III.14 BLM Land Designations, Classifications, Allocations, and Lands With Wilderness Characteristics
- III.15 Mineral Resources
- III.16 Livestock Grazing
- III.17 Wild Horses and Burros
- III.18 Outdoor Recreation
- III.19 Transportation and Public Access
- III.20 Visual Resources
- III.21 Noise and Vibration
- III.22 Public Safety and Services
- III.23 Socioeconomics and Environmental Justice
- III.24 Department of Defense Lands and Operations
- III.25 Literature Cited

### III.1.1 Background and Overview: LUPA Decision Area and the DRECP Area

#### III.1.1.1 Terminology

The geographic scope of information presented in this volume is the Bureau of Land Management's (BLM) Land Use Plan Amendment (LUPA) Decision Area, as illustrated in Figure III.1-1 (LUPA Decision Area and Ecoregion Subareas). This map illustrates the boundaries of both the LUPA Decision Area and the DRECP area, as well as the boundaries of the 10 ecoregion subareas. The DRECP boundary encompasses an area slightly smaller than the California Desert Conservation Area (CDCA); this area is called the ***DRECP area***. The affected environment described in this volume includes the entire DRECP area for all environmental disciplines. For resources that could be affected by the LUPA components in the areas outside of the DRECP area, the affected environment also includes the areas of the CDCA that extend beyond the DRECP area; this area is the ***LUPA Decision Area***.

This environmental impact statement (EIS) analyzes potential impacts within transmission corridors that extend outside the DRECP area, so this volume also describes the affected environment for those corridors.

The Baseline Biology Report, Appendix Q, considers a much broader area than the DRECP area boundaries and serves as background for the affected environment. Within this report, profiles of species provide information about their habitats both inside and outside the DRECP area. The decision as to whether each chapter uses the LUPA Decision Area boundary or the DRECP area for analysis depends upon whether the LUPA decision that would affect areas outside of the DRECP area would create effects for each resource.

### **III.1.1.2 Overview of the LUPA Decision Area**

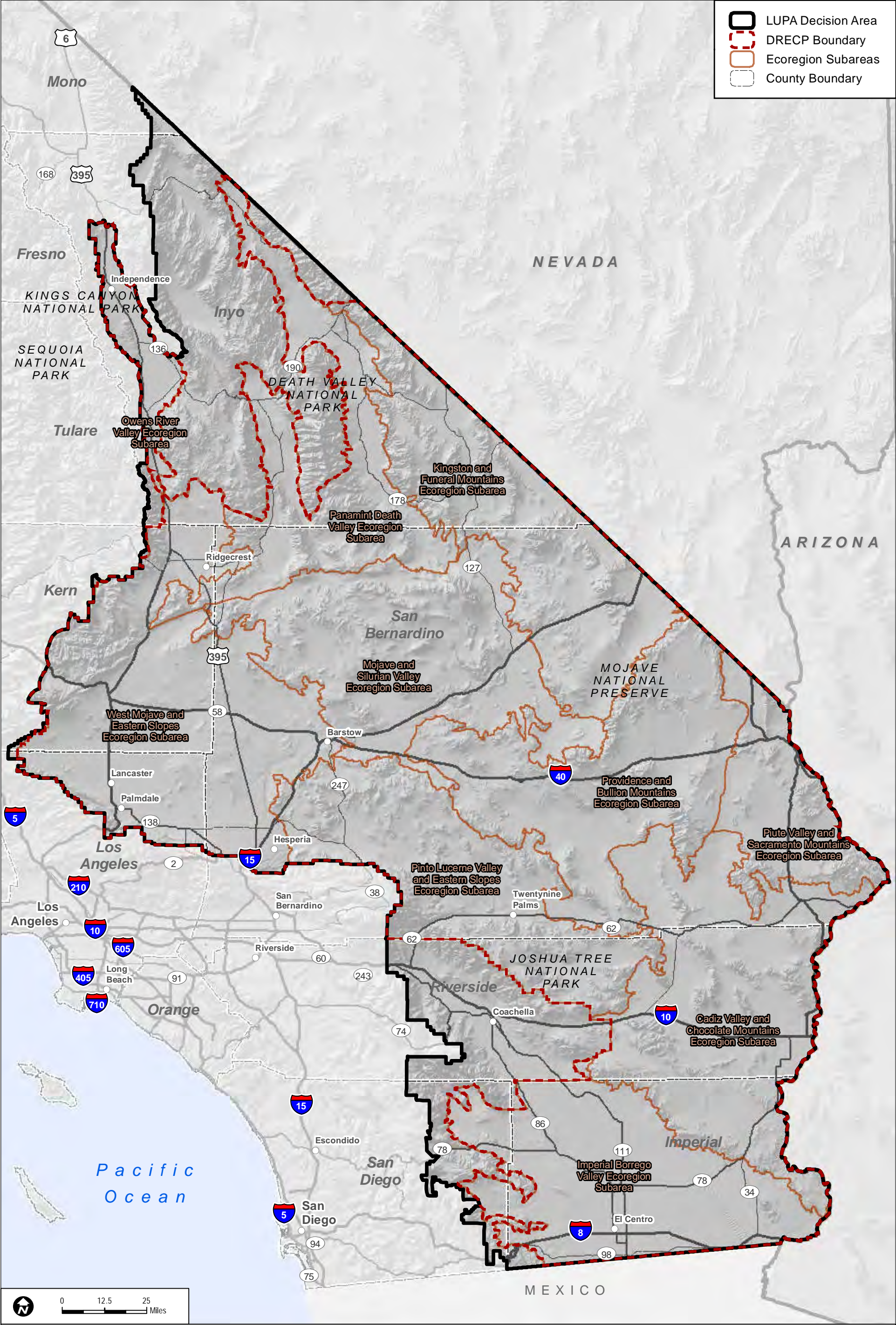
The desert region described in this affected environment volume covers more than 35,000 square miles and spans the California deserts and adjacent areas from Imperial County and eastern San Diego County in the south to Inyo County and eastern Kern County in the north. The region is bounded by Baja California (Mexico) to the south; Arizona and Nevada to the east; the Sierra Nevada and Tehachapi mountain ranges to the north and northwest; and the Peninsular and Transverse mountain ranges to the west.

The topography within the desert ranges from 280 feet below mean sea level in the Salton Trough to elevations of 8,500 to 8,700 feet above mean sea level in the southern Sierra Nevada area. The majority of the region is at the middle elevation range of approximately 1,500 to 3,500 feet above mean sea level. A large portion of the desert is relatively flat, with the flattest areas in the Mojave Desert's high desert plains and hills and in the Colorado/Sonoran Desert.

The region includes the Mojave and Colorado/Sonoran deserts and a small portion of the Great Basin Desert. The geomorphology (landforms and relief patterns of the earth's surface) of the desert region is dominated by short, isolated mountain ranges within desert plains. Major landforms include mountains, plateaus, alluvial fans, playas, basins, and dunes. See Chapter III.4, Geology and Soils, for more information regarding landforms.

In these desert regions, the climate is generally characterized by hot, dry summers and mild to cold winters. Rainfall originates from winter frontal storms off the Pacific Ocean and occasional summer convective monsoons; these sources are variable, however, in different regions of the desert. Winter storms generally bring widespread, longer duration, low-intensity rainfall, particularly in the western desert regions (Mojave). Summer monsoons generate isolated, short, high-intensity rainfall in the eastern desert regions (Colorado/Sonoran) (Lichvar and McColley 2008). Annual precipitation ranges from approximately 3 inches in the low deserts (Colorado/Sonoran) to approximately 8 inches in the high deserts and desert ranges (Mojave) (U.S. Forest Service 1997).





Sources: ESRI (2014); BLM (2015); RECON (2015)

**FIGURE III.1-1**  
**LUPA Decision Area and Ecoregion Subareas**



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The Mojave Desert is a “cold” or winter desert, with about 50% to 70% of rainfall occurring during the winter. Rainfall amounts are geographically and seasonally variable and related to topography and elevation. The Colorado/Sonoran Desert is lower in elevation overall and hotter and drier than the Mojave Desert. In contrast with the Mojave Desert, the lower elevations of the Colorado/Sonoran Desert seldom experience subfreezing temperatures and frost. There is winter rain, but a substantial portion of the annual rainfall in the Colorado/Sonoran Desert is from the North American monsoon, which typically occurs from July to late September. Compared with the Mojave Desert, precipitation patterns and temperature regimes across the Colorado/Sonoran Desert are less variable. See Chapter III.3, Meteorology and Climate Change, for more information on climate patterns.

Major hydrologic features in the LUPA Decision Area include the Lower Colorado River, Salton Sea, Owens River, Owens Lake, Mojave River, and Amargosa River. The area is divided into two major hydrologic regions: the South Lahontan Hydrologic Region and the Colorado River Hydrologic Region. See Chapter III.5, Flood Hazard, Hydrology, and Drainage, for more information about hydrologic features.

### **III.1.2 Ecoregion Subareas Within the DRECP Area**

The DRECP area is divided into ecoregion subareas, and these subareas are further divided into 33 ecoregion subarea subunits. The two categories of areas in the Baseline and Impact Analysis sections of this document are:

- **Ecoregion Subareas** – These are the 10 broad planning units used consistently in this document. They were defined initially in the U.S. Forest Service system (U.S. Forest Service 1997), which established ecoregion boundaries but later modified the term for DRECP purposes. The names and geographic boundaries of the ecoregion subareas appear in Figure III.1-1. The ecoregion subareas are:
  - Cadiz Valley and Chocolate Mountains
  - Imperial Borrego Valley
  - Kingston and Funeral Mountains
  - Mojave and Silurian Valley
  - Owens River Valley
  - Panamint Death Valley
  - Pinto Lucerne Valley and Eastern Slopes
  - Piute Valley and Sacramento Mountains
  - Providence and Bullion Mountains
  - West Mojave and Eastern Slopes

- **Subunits of Ecoregion Subareas** – These are units within an ecoregion subarea (e.g., West Mojave 1). These units were created specifically for the DRECP and are used for the more detailed analyses of certain geographic components of alternatives including distribution of generation and analysis of operational effects. Some disciplines within this EIS present analyses within ecoregion subareas and subunits, wherever appropriate, to describe settings and impacts.

### III.1.3 Definition of Environmental Baseline

The National Environmental Policy Act and Council on Environmental Quality regulations require that environmental impact statements should “succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration” (40 Code of Federal Regulations 1502.15). Establishing a baseline is therefore fundamental to an EIS analysis.

Substantial interagency coordination was required to develop this DRECP EIS. Many renewable energy projects were approved or constructed during the time these documents were planned and prepared. The affected environment includes more than 53 renewable energy projects within the DRECP area, listed in Appendix O (Existing Renewable Energy Projects). This project list is not inclusive of all existing projects but presents a representation of existing projects and the types of impacts their construction and operation have created in the DRECP area.

The Proposed LUPA would allow permitting of additional renewable energy projects. Figures III.1-2a and III.1-2b show the locations of these projects, and Table III.1-1 summarizes their acreage and generation capacities.

**Table III.1-1  
Summary of Existing Renewable Energy Projects in the DRECP Area**

	Generation Capacity		Acreage			
	Total MW	% of Total MW	% of Total Acres	Total Acres of RE Projects in DRECP Area	Total Acres of RE Projects in DFAs	% of Total RE Project Acreage in DFAs
<i>BLM-administered public lands: total</i>	2,855	36%	30%	29,128	13,081	45%
Wind	615	22%	52%	15,028	2,592	17%
Solar	2,240	78%	48%	14,100	10,489	74%
<i>Private lands and other public lands: total</i>	5,019	64%	70%	68,460	N/A	N/A
Wind	2,015	40%	65%	44,643	N/A	N/A

**Table III.1-1**  
**Summary of Existing Renewable Energy Projects in the DRECP Area**

	Generation Capacity		Acreage			
	<i>Total MW</i>	<i>% of Total MW</i>	<i>% of Total Acres</i>	<i>Total Acres of RE Projects in DRECP Area</i>	<i>Total Acres of RE Projects in DFAs</i>	<i>% of Total RE Project Acreage in DFAs</i>
Solar	2,904	58%	35%	23,272	N/A	N/A
Geothermal	100	2%	0.1%	545	N/A	N/A
<b>TOTAL renewable energy projects</b>	<b>7,874</b>	<b>100%</b>	<b>100%</b>	<b>97,588</b>	<b>13,081</b>	<b>N/A</b>

**Note:** This data is summarized from the table in Appendix O.

The Development Focus Area (DFA) locations for the Preferred Alternative are used to illustrate the concentrated areas of renewable energy projects in this exercise. While the sizes and locations of DFAs vary among alternatives, this data provides the locations of existing renewable energy in comparison with the proposed DFAs. The Preferred Alternative contains 388,000 acres of DFAs.

The baseline includes specifically allowable land uses and use restrictions in decisions and plans. For example, BLM LUPA decisions associated with individual projects are effective immediately upon approval, so the environmental baseline would include the effects of BLM's land use planning decision on grazing, recreation, or realty (i.e., uses of the land). However, the actual physical effects of construction of a project would not be included if they occurred after the baseline date. Those impacts are considered to be reasonably foreseeable and are therefore included in the analysis of cumulative effects rather than in the baseline.

**Baseline Data.** In Chapters III.2 through III.24, data rounding was applied to raw values to avoid false precision when presenting calculated values. However, there were tradeoffs in presenting rounded values. Numerical data presented and analyzed in this volume comes from a variety of different sources with varying levels of precision in their data. For presentation purposes, the following general rounding rules were applied: values greater than 1,000 were rounded to the nearest 1,000, values less than 1,000 and greater than 100 were rounded to the nearest 100, and values of 100 or less were rounded to the nearest 10. Each value, including the totals and sub-totals, was independently rounded directly from the underlying source data. However, because totals and sub-totals were independently rounded they may not be the exact sum of the other constituent lower-level table values.

### III.1.4 Affected Environment Outside the DRECP Area

The Proposed LUPA would have effects outside of the DRECP area because required transmission facilities would be constructed or upgraded so that their generation could be reliably transported to areas in California with high electricity demand—in this case to the



San Diego and Los Angeles areas and to northern California areas served by Pacific Gas and Electric Company. Resource discussions in each chapter within Volumes III and IV include specific discussion of both resources and effects outside of the DRECP area.

### **III.1.5 Organization of the Affected Environment Chapters**

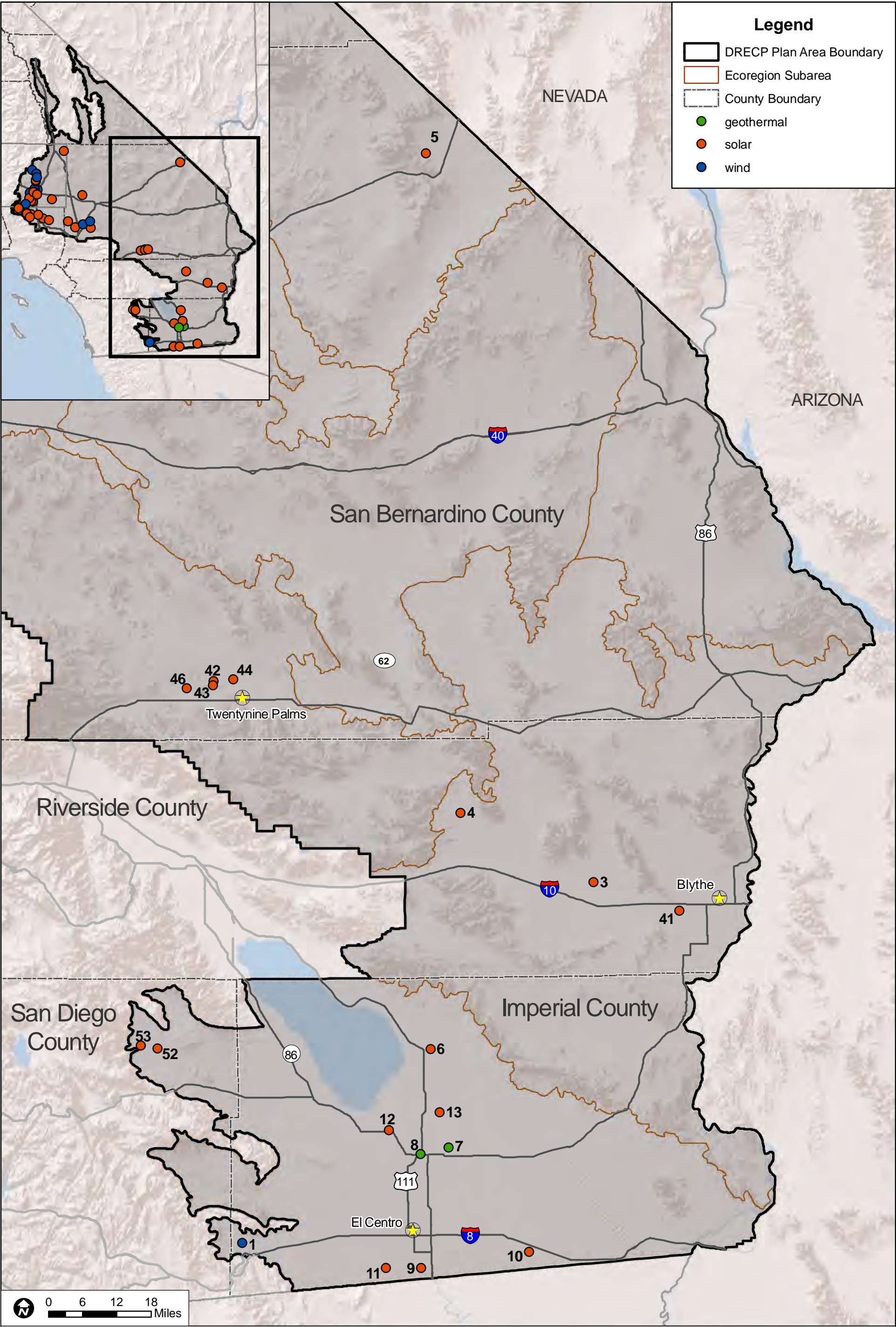
The organization of the sections within Volume III differs among chapters since resources are distributed differently across the LUPA Decision Area. Each chapter within Volume III includes high-level sections on the following topics:

- **Regulatory Setting.** Each resource chapter has a section describing the existing laws, orders, regulations, and standards that are relevant to conservation or development within the LUPA Decision Area.
- **Overview of Resources Within the LUPA Decision Area.** This section describes the existing conditions for each resource within the LUPA Decision Area. Most resources are described by ecoregion subarea, but that characterization is not appropriate for all chapters.
- **Specifics on Resources Within the LUPA Decision Area.** Each chapter has a section describing, on a programmatic level, the affected environment for that resource.
- **Resources Outside of the DRECP Area.** The affected environment is described for the areas through which transmission lines would likely pass, outside of the DRECP area.



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Sources: ESRI (2014); CEC (2013); Desert Renewable Energy Conservation Plan (DRECP)

FIGURE III.1-2B

Existing Renewable Energy Projects in DRECP Plan Area (Eastern Portion)

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